

# COURSE SYLLABUS

\*\*\*\*\*

**YEAR COURSE OFFERED:** 2016

**SEMESTER COURSE OFFERED:** SPRING

**DEPARTMENT:** ENSC (Environmental Science)

**COURSE NUMBER:** 1102

**NAME OF COURSE:** Environmental Science II Laboratory

**NAME OF INSTRUCTOR:** TBD

\*\*\*\*\*

**The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.**

\*\*\*\*\*

## **Learning Objectives**

Upon successful completion of this course, students will be able to

1. Delineate relationships between living and non-living components of biogeochemical systems that comprise the biosphere
2. Communicate a practical understanding of the biology, chemistry and physics that relate to environmental quality and the scientific methods used to measure the pertinent parameters
3. Collect and analyze field data and write reports
4. Work with peers to apply content knowledge in problem solving
5. Effectively communicate solutions and reasoning to classmates and course instructor

## **Core Objectives (CO)**

Environmental Science II Laboratory addresses the following core objectives to ensure students develop the essential knowledge and skills they need to be successful in college, in a career, in their communities, and in their lives.

- Critical Thinking Skills - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- Communication Skills - to include effective development, interpretation and expression of ideas through written, oral and visual communication
- Empirical and Quantitative Skills - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- Team Work - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

## **Major Assignments/Exams**

# COURSE SYLLABUS

The course components below are designed to meet the course objectives.

- **Quizzes:** pre-field/laboratory quizzes will be given prior to each experiment during the semester; questions will be multiple choice, short answer or essay and will cover material important to understanding the laboratory exercises
- **Laboratory reports:** written summaries of each field/laboratory exercise, including the objectives, hypotheses, experimental design, methods, data collected, analysis of results, and discussion/conclusion

Learning Outcomes	CO	Assessment Methods	Criteria/Targets
1. Delineate relationships between living and non-living components of biogeochemical systems that comprise the biosphere.	CT	Pre-field/lab quizzes and post-field/lab analysis and reports	≥70% of students will correctly answer >70% of the questions on the pre-field/lab quizzes; ≥70% of students will correctly analyze and interpret results of field/lab experiments.
2. Communicate a practical understanding of the biology, chemistry and physics that relate to environmental quality and the scientific methods used to measure the pertinent parameters.	CT	Pre-field/lab quizzes and post-field/lab analysis and reports	≥70% of students will correctly answer >70% of the questions on the pre-field/lab quizzes; ≥70% of students will correctly analyze and interpret results of field/lab experiments.
3. Collect and analyze field data and write reports.	CT, EQS, COM	Pre-field/lab quizzes and post-field/lab analysis and reports	≥70% of students will correctly answer >70% of the questions on the pre-field/lab quizzes; ≥70% of students will correctly analyze and interpret results of field/lab experiments.
4. Work with peers to apply content knowledge in problem solving.	EQS, TW, COM	Field/lab experiments are performed in assigned groups with each group member responsible for a key role	≥75% of students will participate and provide key components to each field/lab exercise of

# COURSE SYLLABUS

			the group.
5. Effectively communicate solutions and reasoning to classmates and course instructor.	COM	Peer assessment of field/laboratory exercises and analyses	≥75% of students will complete and present field/lab reports on each experiment.

## **Required Reading**

Laboratory manual TBD

## **Recommended Reading**

N/A

## **List of discussion/lecture topics**

- Lab and field orientation, scientific method, experimental design
- Water quality analysis
- Soil analysis
- Air analysis
- Field trips
- Related studies of local environments